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IS 7984 (1991): Rubbing compound [CHD 23: Lac, Lac Products and Polishes]



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भारतीय मानक
घर्षण यौगिक — विशिष्ट
(पहला पुनरीक्षण)

Indian Standard
RUBBING COMPOUND — SPECIFICATION
(*First Revision*)

UDC 667.691

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

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Price Group 2

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Polish Sectional Committee had been approved by the Chemical Division Council.

The rubbing compound is used on lacquered or painted surfaces to produce a smooth and high gloss finish.

In the preparation of this standard, considerable assistance has been derived from U.S. Federal Specification No. TT-R-771-1953 'Rubbing compound, lacquer'.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

RUBBING COMPOUND — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for rubbing compound used for lacquered or painted metal surfaces.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard:

IS No.	Title
736 : 1965	Wrought aluminium and aluminium alloy plate for general engineering purposes (<i>third revision</i>)
737 : 1965	Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes (<i>third revision</i>)
1070 : 1977	Water for general laboratory use (<i>second revision</i>)
1448 (Part 20) : 1982	Methods of test for petroleum and its products: Part 20 Flash point by Abel apparatus (<i>first revision</i>)
4905 : 1968	Methods for random sampling
5691 : 1970	Lacquer, cellulose, pigmented, finishing, glossy
8171 : 1984	Glossary of terms relating to polishes and related materials (<i>first revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 8171 : 1984 in addition to the following shall apply.

3.1 Ambient Temperature

It is the temperature between 21°C and 38°C.

4 TYPES

4.1 The rubbing compound shall be of two types:

- Type 1 — For hand rubbing, and
- Type 2 — For machine rubbing.

5 REQUIREMENTS

5.1 Description

The compound shall be in the form of a paste containing a finely divided abrasive.

5.1.1 The ingredients shall be homogeneously blended and processed to produce a stable paste characteristics without any visible sign of separation of liquid/solvents in the rubbing compound.

5.2 Freedom From Toxicity

The rubbing compound shall not contain any material which would constitute health hazard to personnel when used as specified herein, and shall not produce obnoxious vapours in such concentrations as to become an annoyance or toxic hazard to personnel. It shall contain no ingredients which may be injurious to health under normal conditions of use.

NOTE — The manufacturers shall give a certificate in respect of freedom from toxicity.

5.3 Effect on Lacquered/painted Surface

When tested as described in A-1 rubbing compound shall neither chemically attack a lacquered/painted surface nor have any solvent action.

5.4 Corrosion of Aluminium

The rubbing compound shall not discolour or attack aluminium clad, aluminium alloy surface when tested as described in A-2.

5.5 Alkalinity

The pH value of the rubbing compound shall be between 9 and 10.5 when tested as described in A-3.

5.6 Flash Point

The flash point (Abel) of the rubbing compound shall not be less than 30°C when tested by the method given in IS 1448 (Part 20) : 1982.

5.7 Rubbing Efficiency

When tested as described in A-4, the sum of the average loss in mass of each of two duplicate panels shall be 44 to 75 mg for Type 1 and 10 to 23 mg for Type 2.

5.7.1 After the rubbing efficiency test (A-4) the lacquered/painted surface shall be smooth, free from orange peel and scratches, and shall be sufficiently thick to completely hide the under surface.

5.7.2 The rubbing compound shall stay loosely on the lacquered/painted surface and shall be capable of being rubbed off easily even after 24 hours of application.

5.7.3 The abrasive portion shall completely pass through 150 micron sieve when tested as described in A-5.

5.8 Keeping Quality

The rubbing compound furnished under this specification shall conform to the requirements thereof for one year from the date of manufacture when stored in original sealed containers under cover at ambient temperature.

6 PACKING AND MARKING

6.1 Packing

The rubbing compound shall be supplied in sound, clean and dry slip-lid metal containers or in any other container compatible with the product. The size of the containers shall be as agreed to between the purchaser and the supplier.

6.1.1 The containers shall be packed in lots in cartons and the cartons in turn in fibreboard (cardboard) or wooden boxes or as agreed to between the purchaser and the supplier.

6.2 Marking

6.2.1 The containers shall be marked with the following:

- a) Indication of source of manufacture,
- b) Net mass of material when packed,
- c) Name of the material,
- d) Description of the surface material (flooring) for which it is specially intended and recommended mode of application,
- e) The words 'Store in a cool place away from heat and open flame',
- f) Directions for use, and
- g) Month and year of manufacture.

NOTE — Any other marking required under Weights and Measures (Packaged Commodities) Regulations 1977, may also be given.

7 TEST METHOD

7.1 Tests shall be carried out as prescribed in Annex A.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (see IS 1070 : 1977) shall be used in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

8 SAMPLING

8.1 Representative samples of the rubbing compound shall be drawn as prescribed in Appendix B.

ANNEX A

(Clauses 5.3, 5.4, 5.5, 5.7.1 and 5.7.3)

METHODS OF TEST FOR RUBBING COMPOUND

A-1 TEST FOR EFFECT ON LACQUERED/PAINTED SURFACE

A-1.1 Procedure

Take two 75 mm × 150 mm panels of 1 mm thickness, cold-rolled low carbon steel strip. Degrease and spray two coats of lacquer (see IS 5691:1970)/paint. Allow atleast 4 hours or the time required under the above-mentioned specification for drying between the application of two coats and then allow to air-dry for 24 hours after the application of second coat. Apply both panels with the rubbing compound in accordance with the manufacturer's instructions and allow to stand at room temperature for 24 hours. Wipe one-half of each panel, clean and visually examine the lacquered/painted surface for any sign of chemical attack. Allow the panels to stand for an additional 24 hours

and wipe the remaining portions clean. Visually examine the lacquered/painted surface for any sign of chemical attack or solvent action.

A-2 TEST FOR CORROSION OF ALUMINIUM

A-2.1 Procedure

Take two 25 mm × 150 mm clean panels of aluminium alloy conforming to IS 736 : 1965 or IS 737 : 1965. Coat with the rubbing compound in accordance with the manufacturer's instructions and allow to stand at room temperature for 24 hours. Wipe one-half of each panel clean and visually examine the cleaned surfaces for corrosive attack, staining or discolouration. Allow the panels to stand for an additional 24 hours and wipe the remaining portions clean. Visually examine the cleaned surface for corrosive attack, staining, or discolouration.

A-3 TEST FOR ALKALINITY

A-3.1 Procedure

Place 10.0 ± 0.5 g of the sample of the rubbing compound in a 100 ml beaker and 75 ml of water. Stir the mixture vigorously for one minute and determine the pH value electrometrically using a glass electrode.

A-4 TEST FOR RUBBING EFFICIENCY

A-4.1 Preparation of Rubbing Block

The rubbing surface of the block shall be 100 mm long and 75 mm wide and designed so that a strip of flannel cloth may be securely clamped to and stretched over the block in order to completely cover the bottom rubbing area. Provision shall be made for the attachment of load weights to the top of the block in an evenly apportioned manner to give total mass of 3.5 and 6.5 kg. The block shall be operated in a level, smooth, reciprocating motion through a length of 50 mm in a direction parallel to the length of the block. The block shall operate at a speed of 40 strokes per minute, a stroke being considered as one complete cycle from starting position of block and return to starting position.

A-4.2 Preparation of Test Panels

Prepare 4 panels of 75 mm \times 125 mm \times 3 mm of low carbon steel, one face of which shall be machined level. Paint the levelled face with two coats of lacquer (see IS 5691 : 1970). Allow at least 4 hours or the time required under the above-mentioned specification for drying between the application of 2 coats and then allow to air-dry for 24 hours after the application of second coat. After air-drying for 4 days, wash the panel vigorously with a mild soap solution, rinse and dry thoroughly, and weigh to the nearest milligram.

A-4.3 Procedure

Take a panel prepared (see A-4.2) and keep it securely in position beneath the rubbing block

with 125 mm dimension parallel to the length of the block. Clamp a fresh strip of flannel on the rubbing block. Add weights till total rubbing block mass is 3.5 kg. Measure 2 g of the rubbing compound, care being taken to eliminate air pockets, and spread it using a spatula as evenly as possible over the portion of the flannel which will contact the panel. Place the rubbing block in position and move through 100 strokes. Remove the rubbing block and discard the flannel. Wash the panel thoroughly using a mild soap solution and a soft bristle brush, dry thoroughly and weigh. Repeat the above procedure on a second panel, using fresh flannel and rubbing compound. Subject to the third and fourth panels to the entire procedure outlined above except that total rubbing block mass is 6.5 kg and only 40 strokes shall be used. Use fresh flannel and rubbing compound for each panel. The first and second panels tested above shall be paired as one set of two panels, and the third and fourth panels shall be considered as the other set of two panels.

A-4.4 Calculation

Calculate the average loss in mass of each set of two panels in milligrams. The sum of the two averages shall meet the requirements of 5.7.

A-4.4.1 Examine each panel after the completion of test for compliance with requirements given in 5.7.1.

A-5 TEST FOR RESIDUE ON TEST SIEVE

A-5.1 Weigh approximately 10 g of the rubbing compound in a 100-ml conical flask. Add 50 ml of benzene and alcohol (1 : 1) mixture, shake thoroughly and allow it to stand. Take out the supernatant layer slowly without disturbing the bottom layer. Add 25 ml of acetone, mix well and transfer the contents to a 150 Micron IS Sieve using a wash bottle containing acetone. Wash the sieve gently. There should not be any residue on sieve.

ANNEX B

(Clause 8.1)

SAMPLING OF RUBBING COMPOUND

B-1 GENERAL REQUIREMENTS OF SAMPLING

B-1.0 In drawing, preparing, storing and handling test samples the following precautions and directions shall be observed.

B-1.1 Samples should be taken in protected place not exposed to damp air, dust or soot.

B-1.2 The sampling instrument shall be clean and dry when used.

B-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

B-1.4 To draw a representative sample, vertical sections of the compound at uniformly placed

points shall be taken and mixed as thoroughly as possible by suitable means.

B-1.5 The samples shall be placed in clean, dry and airtight glass or other suitable containers on which the material has no action.

B-1.6 The sample containers shall be of such a size that they are almost completely filled by the sample.

B-1.7 Each sample container shall be sealed airtight after filling and marked with full details of sampling, the date of sampling and the month and year of manufacture of the material.

B-1.8 Sample shall be stored in such a manner that the temperature of the material does not vary unduly from the ambient temperature.

B-2 SCALE OF SAMPLING

B-2.0 Samples to determine the conformity of a consignment of rubbing compound to this specification shall be selected so as to be representative of the consignment. Samples drawn in compliance with an agreement between the purchaser and the supplier, to evaluate the various characteristics of the material, shall be held to be representative of the consignment. In the absence of such an agreement the following sampling scheme is recommended to serve as a guide.

B-2.1 Lot

All the containers in a single consignment of the material drawn from the same batch of manufacture and of the same size shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture or of different size of containers, the containers belonging to the same batch and size shall be grouped together and each such group shall constitute a separate lot.

B-2.1.1 Samples shall be tested for each lot for ascertaining the conformity of the material to the requirements of this specification.

B-2.2 The number of containers (n) to be selected from the lot shall depend upon the size of the lot (N) and shall be in accordance with Table 1.

Table 1 Number of Containers to be Selected for Sampling

Lot Size	No. of Containers to be Selected
N	n
(1)	(2)
Up to 500	10
501 to 1 000	15
1 001 and above	20

B-2.2.1 In addition to the number of containers selected in B-2.2, an additional number of containers shall be selected from each lot so as to determine corrosion characteristics and to obtain 200 g of the material for determination of flash point of the volatile portion of the material.

B-2.3 These containers shall be selected at random from the lot (see IS 4905 : 1968). In order to ensure the randomness of selection, random number table as agreed to between the purchaser and the supplier shall be used. In case such table is not available, the following procedure shall be adopted:

Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2, 3,, up to r and so on where r is the integral part of N/n , N being the total number of containers in the lot and n the number of containers to be selected. Every r th container thus counted shall be withdrawn from the lot to give a sample for test.

B-3 PREPARATION OF COMPOSITE TEST SAMPLE

B-3.1 Draw with a cork borer whose inside diameter is approximately 2 cm, vertical sections of the material from several different points of the surface of the opened containers selected according to B-2.2. This total quantity of material drawn from each container shall be the same and shall not exceed 50 g.

B-3.2 Thoroughly mix below 45°C with a mechanical stirrer all the portions of the material drawn from different containers so as to form a composite test sample weighing not less than 400 g. Divide this composite sample into three parts, each sufficient for carrying out the intended tests and transfer them to thoroughly cleaned and dry sample containers. Send one each of these to the purchaser and the supplier. Reserve the third composite sample as referee sample bearing the seals of the purchaser and the supplier. Keep the referee sample at a place agreed to between the purchaser and the supplier.

B-4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-4.1 Test for corrosion and flash point shall be done on the material collected from the containers as selected in B-2.2.1.

B-4.2 Tests for the determination of all other characteristic (given in 3) shall be conducted on the composite sample.

B-4.3 The lot shall be declared as conforming to the requirements of this specification if the test results as obtained under B-4.1 and B-4.2 satisfy the corresponding requirements.

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